

British Tanks of WWII

(1) France & Belgium 1944

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Introduction

From 1943 onwards life became increasingly difficult for the residents of southern England. The average civilian found greater restraints placed upon movement. Not only were security restrictions operating in some areas, military forces appeared to be moving about in increasing numbers. The closer to the coast you were the more difficult it became. From the flat, muddy creeks and inlets of Essex around to the rocky shores of Cornwall the country was infested by the military. Huge camps of soldiers, vast dumps of vehicles and always the endless movement, all building towards one incredible climax, the largest amphibious operation ever mounted.

In the west, in Dorset, Devon and Cornwall, this activity mostly involved the United States Army. To the east, but focussed on the Portsmouth/Southampton area, it was British and Canadian troops that dominated. And all of this was taking place in a region of England that was within easy reach of enemy aircraft capable of mounting reconnaissance flights and bombing raids. Of course the German high command knew that invasion was in the wind and they knew that it could not be long delayed. They could not say precisely when it might occur, but worse still they had no idea where. The Germans occupied virtually every foot of coastline that faced Britain, from the northernmost part of Scandinavia to the western tip of France and in theory every foot was vulnerable to attack.

It might not have been so difficult for the Germans if that was all they had to worry about. But their commitments in Russia dwarfed the problem in the west and yet they still had the southern coast of France and the Italian front to consider, not to mention places such as Greece and Yugoslavia. To make matters worse the Allies did everything in their power to plant confusion in the enemy mind, largely by playing up to the Germans' most obvious fears; an attack on Norway or mass assault across the narrow Straits of Dover.

So much for the larger picture. Considered in more detail the problems were no less daunting for the Allies. There are few operations in warfare more difficult to mount successfully than the direct assault on a defended coast. First it is essential for the attackers to have complete command of the sea and air. Then they have to make their initial strike strong enough to push the enemy back from the coastline and create a viable beachhead. One in which there is room to move, build up strength and establish a secure base. Everything an army might need, from fuel and food to ammunition and medical supplies had to be available immediately. Even if the initial battles were successful the whole thing could easily become a logistics nightmare, and if the battle did not go well retreat was virtually impossible.

It is difficult not to deal in superlatives when thinking of the Allied invasion of France which took place on 6 June 1944. Yet to the average soldier, aware as he might be of his place in the great scheme of things, it was the rigors of daily life that counted. There was an endless round of training, on land and sea. Lectures, parades, inspections and realistic exercises. As the great day drew nearer there was an immense amount of back-breaking work, preparing vehicles of every shape and size to drive down the ramps of landing craft, through sea water and up onto a beach ready to fight.

Take, for example, the experience of one regiment, the 23rd Hussars in 11th Armoured Division. As a regiment they had yet to undergo the stress of combat in any form but they were very well trained. Recently equipped with Sherman tanks they moved to Aldershot in September 1943. "It had become common knowledge

that, at some not far distant date, an assault was to be made across the Channel. It was considered, therefore, that all vehicles must be prepared for wading ashore through a few feet of water from specially constructed boats. Every crack and hole in the tanks would therefore have to be sealed with special materials to make them completely waterproof. Training for this ambitious and novel project was put in hand, instructors departed on the inevitable courses, mock-up boats were put up everywhere to practice driving on and off, and tanks and wheeled vehicles were constantly being sealed with varying, but slowly increasing, degrees of success in any stretch of water available".

To complicate matters there were changes of organization. The 23rd Hussars again: "Originally the (Recce) troop was to have Scout cars. But they never came because a definite decision was never made as to whether or not the Scout car was the best vehicle for the job it was likely to have to do. By the time the North African landings were made the Troop had been fully equipped and trained with Universal Carriers, popularly known as Bren Carriers. In many ways it would have been ideal. Above all it could be easily hidden. But it had no punch at all and its performance across country was not good. It could never go fast enough to keep ahead of the tanks on an exercise, when the only thing that could knock a tank out or make the commander go warily was an umpire. And umpires could not be everywhere and were often subalterns - a great disadvantage when the man with his head sticking out of the turret spoke like a Lieutenant Colonel, and probably was one..."

"In the interim period between the Carrier and the Honey tank the Troop trained with Crusaders which were then being considered as a possible vehicle. The idea for some reason was not accepted and it was at last decided to have Stuart tanks, or Honeys as the Americans called them though they bore little resemblance to the glamour girl usually addressed by that name on the screen. They carried a 37-millimetre gun but for reconnaissance purposes had the disadvantage of standing too high. They were thus very difficult to conceal. After our first battle the Troop had the turrets removed from half its tanks."

Battle exercises became increasingly realistic. Large areas of the country were earmarked specifically for training but, even when they were not, tanks soon had permission to move off the road and across fields if it could be justified as part of an effective tactical maneuver. Exercise Spartan, which took place in February 1943, was the largest held in Britain up to that time. It lasted for two weeks and involved huge forces moving long distances all over the country. Commenting upon it the historian of the Guards Armoured Division said that it was most valuable to staff officers of higher formations, presumably at Corps or Army level, who had to deal with practical matters on a large scale for the first time. It was, he said, less instructive for individual soldiers although they were toughened up by the experience of long journeys at night, of dealing with vehicle breakdowns and learning to live in the field with their tanks. More significant still was Exercise Fabius, held in April 1944. This was a full-scale amphibious operation that involved tanks moving to their marshalling areas and from there to the docks where they loaded on to landing craft. Covered by hundreds of Allied aircraft the fleet moved east along the Sussex coast and staged a major landing, moving inland to battle positions on the South Downs, and from there back to their marshalling areas.

Impressive as it was, this exercise and others like it, were entirely conventional. For a flavor of something more exotic one must turn to the annals of the 79th Armoured Division, described by Field Marshal

Montgomery as "unique among all the Divisions in the Allied Armies". Commanded by his brother-in-law, Major-General P C S Hobart, it was regarded by many as the key to success. Formed as a conventional armored division in October 1942 the 79th began converting into a special assault division in April 1943. It was to develop a host of special purpose combat vehicles, examine their tactical application and then train over twenty battalions and regiments, American, British and Canadian in a variety of specially adapted tanks.

A large area in the county of Suffolk was emptied of its civilian population and turned over to the 79th for realistic training against various obstacles, modeled on German designs that might be expected in Europe. An example of what this training involved is given by 1st Lothian and Border Yeomanry, a flail regiment in 30th Armoured Brigade; "The drill, in detail, consisted of sweeping a lane 24 feet wide. As each tank covered eight feet, three tanks were required, the remaining two tanks of the troop being held in reserve ready to replace any tank put out of action. Following the flails came the RE assault vehicles." Only a man such as Hobart, with what amounted to a gift for training soldiers, could have pulled this enormous formation together and prepared it for a new type of combat in just fourteen months. Meanwhile another famous armored division, the 7th, arrived from Italy, bringing with it a fine reputation. It had seen virtually continuous action since the first day of war in the Middle East. It had fought under Montgomery in the El Alamein battle and continued through to the end in North Africa. Moving then to Sicily and Italy it was withdrawn from the line and brought back to Britain in November 1943 to provide a core of experienced combat troops for the invasion.

As the day of invasion drew closer so the workload increased. According to 144 RAC "The authorities seemed to have waited for this particular moment to send us a spate of new gadgets which had to be fitted – infantry telephones, new gun sights, armored ammunition bins and the like. Then there were those lengths of track to be welded on the outsides of tanks to make the thin armor of the Sherman a little thicker. This was of doubtful practical value but said to me a 'morale-raiser'. Extra ammunition storage had to be fitted inside the tanks, although, as it turned out, ammunition supply was not the acute problem in Europe that it had been in the Desert. Bins to carry blankets, rations and bivouac tents had to be attached to the rear of the turrets, as tank crews had to live with their tanks and must be self-contained for long periods. In all this, a good deal of latitude over minor details was given to individual crews, as the domestic arrangements in a tank are a very personal matter."

With invasion imminent a huge security blanket fell over the south of England. Regiments moved first to their Concentration Areas where they went through the initial stages of water-proofing. This complete it was time to move down to the Marshalling Areas, as close to the point of embarkation as they could get. All day and all night for weeks, long columns of vehicles moved towards the coast, passing on the way hundreds more vehicles lined nose to tail along the roads or in adjacent fields. More sealant was applied at this stage before the final, short move to the docks where the last preparations were completed. It was a nerve-racking time. Hear from 144 RAC again; "One of the most trying things during those days of waiting was listening to announcements being made over the 'Tannoy' loud-speaker system. Several times an hour, day and night, one would hear it switched on – a tense pause while the operator blew into the microphone and then the announcement of the serial number of the craft load to be embarked. Would our turn never come?" Finally the vehicles were moved on board ship and crews waited for the signal which would send them off upon the great adventure.

It would probably be impossible to say which was the first Allied vehicle to roll ashore in France and in any case it does not matter. In theory it should have been some of the amphibious DD Sherman tanks which were launched from their landing craft to swim ashore. This account is by the second-in-command of A Squadron, 13th/18th Royal Hussars; "We inflated overnight without difficulty, turned off the air, and refilled our pillars in the morning. The sea was too rough at 7,000 yards, looked better at 6,000 yards but we eventually launched at 5,000 yards although the code word never reached me. The ramp was moving a good deal in the down position. I gave the crews a lot of rum. All tanks had safety devices on the aft short struts and to this fact I attribute the perfect behavior of these struts during the swim in. We went down the ramp in first gear, dipping the clutch at a time suitable to avoid heavy seas. I consider this method preferable in heavy seas to going down the ramp in second gear, as was the drill, as it allows scope for judgement. We were pushed well clear of the ramp, and had our propellers engaged within ten seconds. The seaworthy quality of the Sherman DD astonished me but it was necessary to adopt a zig-zag course to avoid getting beam on to the sea. The Squadron appeared to me to be keeping excellent station, and at one time I could easily count 19 tanks. At about 1,200 yards from the beach various LCT (Landing Craft Tank) apparently steered by maniacs began to appear. It was now H-15 mins. We were running to schedule but had to change course to avoid these LCTs. The Squadron was close together after this but never managed to get into a good line for the touch down. We touched down at about 350 yards from the water line, motored quickly in, and deflated without incident. Throughout the last 2,000 yards rockets (from landing craft) were falling short and fire from the shore kept things interesting. We took several fragments through the screen above water level. Ashore I was so busy firing at the enemy that I did not see what happened to the other four tanks, but one I know was rammed by an LCT and others were hit by shell splinters, and in the end mine was the only tank that got past the beach obstacles on to the lateral." Ingenious as they were the DD tanks could hardly be described as seaworthy and the risks taken by their crews were enormous. Some tanks swam ashore, some sank, and the remainder were taken virtually all the way to the beach by their landing craft. Thus it was that on some beaches other armored vehicles came ashore first. In many cases these would be special assault teams of 79th Armoured Division. Since they fielded such a variety of modified tanks, from mine flails and ploughs, to bridge-layers, carpet-layers and engineer assault tanks each team was selected, and loaded into its landing craft, to deal with the specific obstacles identified in its sector.

Not everyone crossed the Channel in landing craft. Eleventh Hussars, with their armored cars, were taken over in the merchant ship *Bradford City* and loaded into landing craft off shore; "It was 2pm (on 9 June, D+3) before the first landing-craft came alongside and from then until nearly midnight loading parties of the Regiment worked with the ship's company swinging vehicles from the holds to be ferried ashore. The process was resumed again at daybreak until by 10.45pm the last vehicle had reached dry land. In most cases it had meant landing in the dark, with vehicles descending blindly from the ramps of the landing craft into three-and-a-half feet of water. Nevertheless, with only two exceptions all waded successfully to the beach and, after driving through gaps between the sand dunes by tracks the first Beach Groups had prepared, gained the solid ground of one of the two coastal roads. Thence they were led along, an elaborately flagged route to a leaguer area near the village of Ryes, about fourteen miles to the west."

Not that it always went according to plan. Landing craft could easily drift off course and, even if they came ashore in the right place,

key tanks might be knocked out before they could reach their intended obstacle. At such times the value of thorough training showed through. Tank crews would improvise to overcome whatever obstacle presented itself. A classic example was the Royal Marine Armoured Support Group, a unique formation created to support the Royal Marine Commandos. At one point some of their Centaur close-support tanks were confronted with the task of destroying an enormous concrete wall that blocked a street. It proved to be such a formidable obstacle that at one point the Royal Artillery lent a hand by providing an M10 tank destroyer to add its firepower to the work of destruction.

The first British armored division to land in France was the 7th, the legendary Desert Rats. Their tanks started to come ashore on D+1 (7 June). Even a casual glance on a map towards the eastern end of the Normandy landing area attracts the eye to Caen. Situated on the River Orne and the Caen Canal virtually every road and railway line leads direct to the city. It becomes obvious at once why Montgomery was determined that it should be captured on the first day. With Caen in Allied hands the entire left flank of the beachhead would be secure and it was from the east that the strongest opposition was bound to come. In fact it was to be a month before British and Canadian troops fought their way into the city, by which time it had become the focus for most of the German armor in the area.

In the meantime dozens of other battles had been fought, mainly for the high ground to the west of Caen which enclosed the flat arable land to the east, and the jumble of tiny fields, farms and orchards, intersected by deep lanes, which forms the classic Normandy Bocage country. The nature of tank fighting in the Bocage was recorded by 144 RAC; "Unfortunately the progress of the tanks, particularly the Crocodiles with their heavy trailers, was so slow over the hedges and banks that the light was beginning to fail by the time the second objective was reached. Here the AVREs and Crocodiles were used with great effect on the group of farm buildings which was the objective. First there was the heavy 'crump' from the AVRE's Petard mortar, followed by squirts of flame and pillars of black smoke from the Crocodiles." Initially the area of greatest progress was further west, roughly along the line where British and Canadian troops rubbed shoulders with their American allies. In order to prevent newly arrived German armor from interfering with American plans to break out in the west, British armor was directed on the town of Caumont. Meanwhile, closer to Caen, more British armor was fighting to hold a bridgehead over the river Odon as part of a scheme to envelope Caen.

The battle for Caen attracted most of the German armor in Normandy and set the stage for a massive confrontation. Occupation of the city was of little help to the Allies while the Germans held the hills to the south and Montgomery attempted to solve the problem by a concentrated attack in the east. Known as Operation Goodwood it involved the three British armored divisions; the 7th, 11th and Guards. In the style that won him fame at El Alamein the British commander envisaged a deep penetration on a narrow front, covered by an intense air bombardment on both flanks instead of the mass artillery barrage. In fact the operation almost brought about the destruction of British tank reserves. Squeezed together into a narrow corridor the tanks and their supporting arms experienced dreadful congestion and, when they finally did break out it was in the face of strong enemy resistance in an area that gave every advantage to the defense. Looking back on their part in the battle 2nd Fife & Forfar Yeomanry declared; "The Regiment lost fifty-one tanks during Goodwood and the total casualties to personnel were one hundred. This included the dismounted tank crews killed and wounded during the enemy bombing attack...The Recce Troop had been reduced to

three Honey tanks and the Anti-Aircraft Troop to one solitary Crusader. The personnel normally engaged on recce and anti-aircraft work had been sent to the depleted fighting squadrons."

Pressure was only eased marginally when the Germans switched the emphasis of their attack to deal with American progress in the west. Taking advantage of this Canadian and British armor mounted another mass attack along the main road south of Caen. Known as Operation Totalize it involved columns of tanks, four abreast and nose to tail, in a night advance supported by another mass bombing operation. Listen to 144 RAC again; "The plan for our column, which, with minor variations, also applied to the others, was to advance in a solid phalanx, four vehicles abreast with two yards between vehicles, making a column 16 yards wide by 350 yards long. The OC Reconnaissance Troop was selected as Regimental Navigator and had the responsible job of leading the column. Behind him were...two troops of A Squadron in line. Behind these two troops were the flail squadron, AVREs and bulldozers to be handy in case the leading two troops ran on to a minefield. The remaining two troops of A Squadron were to come next. The next block was the RHQ party consisting of the CO, second-in-command and flail squadron commander, with some light tanks for liaison and a Bren Carrier loaded with spare ammunition. B Squadron were next, again four abreast, with each of the troops in line ahead. They were to be followed by the whole of the 7th Argylls in their armored carriers (Priest Kangaroos) with C Squadron bringing up the rear in the same formation as B Squadron. There were to be no wheeled vehicles in the column which was to be all armored and all tracked." Despite the most courageous defense German armor was overwhelmed and with news of striking American advances to the west and south they were forced back into an area between Falaise and Argentan.

Hampered by orders from Berlin which demanded that they fight to hold every yard of ground the Germans were steadily being pushed into a potential trap. Crowded together into an ever reducing space, under constant attack from the air, German forces fought desperately to hold open an escape route to the east while their commanders negotiated with Hitler for permission to withdraw. This was finally given on 13 August and it was almost too late. American, Canadian and Polish armor attempted to seal the pocket but was not entirely successful. For six days an intense battle raged, with heavy casualties on both sides, before the two Allied elements linked up. Thousands of German troops and hundreds of vehicles were captured but a significant number also managed to break out to the east.

American and British plans for the next stage were the subject of some conflict between Eisenhower and Montgomery. The latter wished to combine the two army groups into one massive phalanx, so strong as to be secure no matter how deep it penetrated into enemy occupied territory. Montgomery's aim was to clear the entire coast as far as Antwerp, to free up enemy held ports and establish a considerable Allied air force in Belgium. Eisenhower, on the other hand wished to strike further south, taking the most direct route into Germany and, in particular the Ruhr industrial area, the heart of Germany's war machine. In the event it was a question of compromise. The Canadians would work along the coast while the British made a dash for Antwerp, with American support on their right flank. Meanwhile American and French troops would head for Paris and the southern fringes of the Ardennes.

First, however, it was essential to get across the river Seine. Until adequate bridges could be created, to replace those demolished by the Germans, it was necessary to resort to other methods. The 15th/19th King's Royal Hussars; "By H-Hour all was ready. At 1900 hours, to

the accompaniment of heavy artillery fire, the infantry assault boats started to cross...Two troops of tanks (of C Squadron) had a lot of shooting at the enemy positions on the hillside. This direct high explosive and machine-gun fire on observed targets was probably successful in neutralizing, though not destroying, a number of machine-gun posts. The main difficulty was to distinguish between our troops and the enemy targets over the river, as the hillside rapidly became obscured by smoke...there was still no news of the building of a class 40 bridge over which the tanks could cross. We soon got a surprise, for orders were received for the Squadron to cross by raft, alternating troop by troop with 4th/7th Dragoon Guards who were to assist in the advance from the bridgehead...After further delay 4/7DG at last started to cross, eight hours behind schedule, but their first two tanks got bogged on landing. So the Sappers had to find another landing place and after this had been done the operation continued more smoothly." The Germans defended the area with great skill but were ultimately overwhelmed and, as new bridges were thrown across the famous waterway, Allied armor moved forward to begin the breakout. The next major objective was the river Somme, redolent with memories of an earlier conflict, some 75 miles to the east. Montgomery handed this task to the three British armored divisions. First away was the 11th, temporarily increased in strength by the addition of 8th Armoured Brigade. In their wake came the Guards who soon passed through 8th Armoured Brigade and then the veteran 7th Armoured Division.

What followed was one of the most dramatic armored sorties in history. On the southern line 8th Armoured Brigade led the way from the Vernon bridgehead through Gisors to Beauvais where they let the Guards Armoured Division pass through. Continuing the advance through Breteuil, Moreuil and Villers-Bretonneux the Guards crossed the Somme and cut the Amiens – Albert highway east of Amiens. Meanwhile, to the north, 11th Armoured Division moved by way of Gournay and Poix to reach Amiens itself. This first stage took just three days and some flavor of it may be learned from 2nd Fife & Forfar Yeomanry: "Corporal Byrne led the Regiment during the whole of the night dash, and he did so in the manner of a born topographer. In strange and sometimes hostile country which he had never seen before, without a single signpost to guide him and in darkness and rain, he made scarcely a single mistake on the complicated route of minor country roads and tracks. As the British columns approached Amiens in the half light of early morning a strange incident with a serio-comic twist occurred. A German Panther emerged from a narrow country by-road on to the main highway. Its commander did not recognize the fact that he was joining a hostile column. He waited a short time, then seizing his chance nipped into place in the stream of traffic. For some time in the dim dawnlight he kept pace happily with the rest of the formation, the one unconscious lone wolf in an aggressive pack. As the day brightened the commander of the British tank following the Panther began to think there was something not quite right about the shape of the vehicle in front of him or about the uniform of its crew. In a few seconds, with a sense of shock, he realized that there was a viper in the British bosom. The Panther commander had come to the same conclusion a few seconds later and shots were exchanged. So intent were the British forces on the task in hand that no one has recorded how this strange incident ended."

On 1 September the advance was resumed. Guards Armoured Division aiming for the prestigious objective of liberating Brussels while the 11th was directed at the more valuable target, from a logistics point of view, of the great port of Antwerp. Again we can turn to the 23rd Hussars, in 11th Armoured Division, for the sense of excitement that prevailed: "On we went, the pace growing faster as we realized that nothing was going to show fight. We rolled off our

one-inch maps and had to use quarter-inch. Frantic officers from Brigade Headquarters rushed up the column, presenting us with little pieces of paper showing us the continuation of our route. The French people screamed and waved at us, rushing forward with bottles of wine and fruit. We became fired with tremendous excitement – an impatient urge to get forward, to move faster, and a feeling that nothing could stop us. The General ('Pip' Roberts) was nearly always with the leading troop, his White Scout Car and red flag flashing up and down the column, urging us on. The signpost said 'Arras – 5 Km'. We listened to the BBC News on a spare set. It was hopelessly out of date. We were advancing farther and faster than we had ever thought possible. Fifty miles had been covered when at 4pm we finally came to at an important cross-roads ten miles north-west of Arras." The main bottleneck was the Belgian city of Tournai but American troops had already captured the town and held the bridge as the British armor roared through. Amidst scenes of wild excitement from the liberated population Guards Armoured Division entered Brussels on the evening of 3 September having covered some 65 miles in a single day. On the afternoon of the following day leading elements of 11th Armoured Division rolled into Antwerp.

Even so progress on this scale could not be maintained indefinitely. Tank crews were exhausted and their vehicles in desperate need of comprehensive maintenance, but if that was not serious enough the supply situation was even worse. To quote from The Administrative History of 21st Army Group: "During this stage the rapidity with which the advance was carried out meant not only that the British lines of communication lengthened to an alarming extent, but all question of the establishment of an advance base in the area of Rouen as originally planned could be abandoned. The entries into Brussels and Antwerp on 3 and 4 September respectively increased the length of the lines of communication by approximately three hundred miles but at the same time gave the opportunity of establishing the advance base in central Belgium with a first-class port in good condition through which supplies could be landed as soon as the approaches could be cleared of all hostile elements. For the moment, however, this huge advance in little more than a week produced administrative problems of no ordinary size. Such a complete disintegration of the German Army had not been envisaged. It had always been expected that somewhere a certain delay would be imposed which would have afforded an opportunity for the build-up of essential stores. This check however, never occurred. Our dumps remained back in the rear maintenance area and the problem of supplying two Corps advancing at an average rate of over forty miles per day had to be faced. It was obviously vitally necessary to exploit to the full the disorganization and retreat of the enemy. Eighth Corps therefore was grounded and all its second line transport, as well as fifty per cent of its first line transport was temporarily removed from it in order to supply the two Corps who were racing forward in the advance. The opposition that they were meeting was not of great account but even so contact had to be continuously maintained and the momentum of the pursuit kept up so that the enemy would have no opportunity of again taking up a defensive position."

A hard winter lay ahead, many tough battles remained to be fought as the Germans retreated into their homeland. But this was a key stage in the war in Europe, a time for some relaxation and much celebration.



Any invasion of Europe would be, by definition, of an amphibious nature and, at the insistence of Prime Minister Churchill as much work had gone into the development of suitable landing craft as it had into tanks. LCT 810, a Landing Craft, Tank Mark 4, is seen here unloading two Mark IV Churchill tanks on a beach in Scotland.



It was also necessary to prepare armored fighting vehicles to wade from landing craft to shore. One center for this activity was Weymouth in Dorset. Here an AEC Mark II armored car of 2nd Household Cavalry leaves the ramp of an LCT and heads for the beach.



Once ashore there would be more problems and the British 79th Armoured Division, under the command of Major General Sir Percy Hobart, developed a range of special purpose fighting vehicles to tackle these problems. This is a carpet-laying Bobbin device, attached to a Churchill tank, which was used to create a firm path over patches of soft clay.



Anti-tank mines were another problem. Here a Sherman tank, equipped with Jeffries Plough is demonstrated on a sandy beach. The plough lifted mines without exploding them, which avoided the risk of deep craters in the beach.



The Sherman Crab's flail was also capable of tearing through wire entanglements, for which cutting blades were provided at each end of the drum. This Sherman has been equipped with deep wading equipment to ventilate the engine while in the sea.



Most seaside towns in Normandy had a protective sea wall at the top of the beach. It presented a serious obstacle to tanks and various means were developed to overcome it. Here a Churchill (UK Pattern) ARK named *Chelmsford* employs fascines to form a ramp enabling a Churchill Mark IV to climb the wall.

Another device developed to deal with walls was the 30 foot Small Box Girder Bridge. Here a Churchill tank has climbed the bridge and is about to drop onto a large stack of fascines which will, hopefully, cushion its fall. The Churchill Armored Vehicle Royal Engineers (AVRE) was designed to carry these bridges and fascines. Most AVREs mounted a large caliber demolition weapon but, in the early days, some only mounted a machine gun in the turret, as shown here. These tanks would carry demolition charges inside which could be placed by hand.



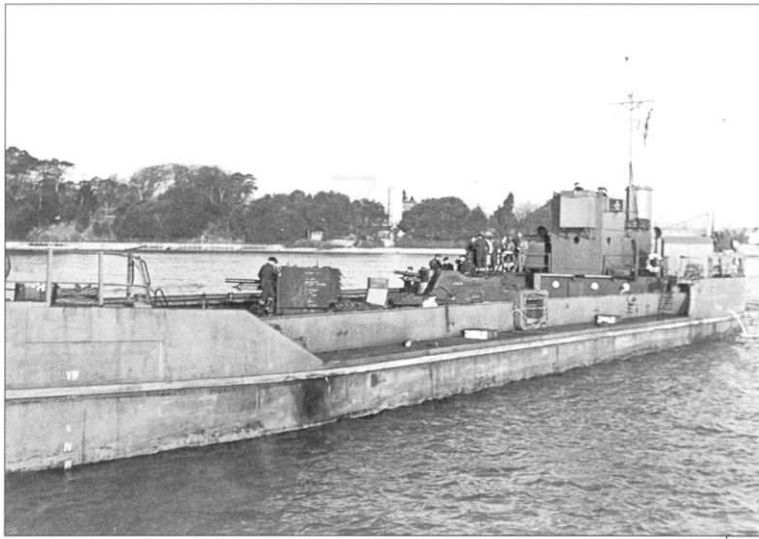
During the Dieppe Raid of August 1942 routes into the town were blocked by reinforced concrete walls. This device, attached to a Churchill tank, was intended to destroy them with explosives. However it was not a comfortable load for a tank to carry and the detonation could be lethal with Allied troops in the area. There is no evidence that it was ever employed on active service.



In this picture a Sherman, with its turret reversed for safety, makes its way through a broken wall of reinforced concrete during training in England. Similar walls were encountered in Normandy but, as we shall see, attempts to destroy them by gunfire from tanks failed miserably.



The special purpose tanks, or Funnies, would operate in teams to tackle anticipated obstacles on D-Day, and were loaded as such on landing craft. This American built LCT (5), in service with the Royal Navy, carries a team of five Churchills including one with a Small Box Girder Bridge, another with the framework of a demolition device and, in the bow, one with a fascine. This photograph was taken during a series of loading trials in England.



Another plan for D-Day was to have self-propelled artillery provide fire support from landing craft as they ran in to the beaches. This photograph was taken off Brownsea Island, in the entrance to Poole Harbour in Dorset when this scheme was being tested. It shows Valentine Bishop and Sexton 25-pounder SPs preparing to fire from the deck of an LCT (4). Bishops were never employed on active service in northwest Europe.



Throughout 1943 and into the early months of 1944 many large scale exercises were held all over England. Here a dispatch rider, on his Norton solo motorcycle, discusses orders with the driver and commander of an Otter Light Reconnaissance Car. Both belong to a Canadian reconnaissance regiment.



As the date of invasion drew closer, exercises became more realistic. Exercise Fabius took place on the south coast early in 1944. Here a Humber Scout Car of headquarters, 27th Armoured Brigade splashes ashore with an LCT (4) in the background. Notice the barrage balloons flying above the craft to hinder attack by low-flying aircraft.



LCT (4) number 1080 disgorges Sherman tanks of the East Riding Yeomanry during Exercise Fabius. Notice that, in addition to its hull number, the LCT has a separate number on the bridge which is repeated, in chalk, on the front of the leading tank. All regiments of 27th Armoured Brigade appear to have used the turret numbering system, in place of the regular squadron symbols.



Another view of Exercise Fabius; Shermans *Bunty* and *Bobbie* (the latter with the temporary prefix HMS for His Majesty's Ship) are rolling ashore. Notice that by this time tanks are fully stowed and equipped with deep wading gear although *Bobbie* also has a motorcycle strapped to the turret.



In the weeks before D-Day many regiments were paraded to receive morale boosting inspections by famous people. Here Sherman tanks of Guards Armoured Division form an immaculate line as Prime Minister Winston Churchill and his wife Clementine sweep by in a half-track, followed by other notables similarly mounted.

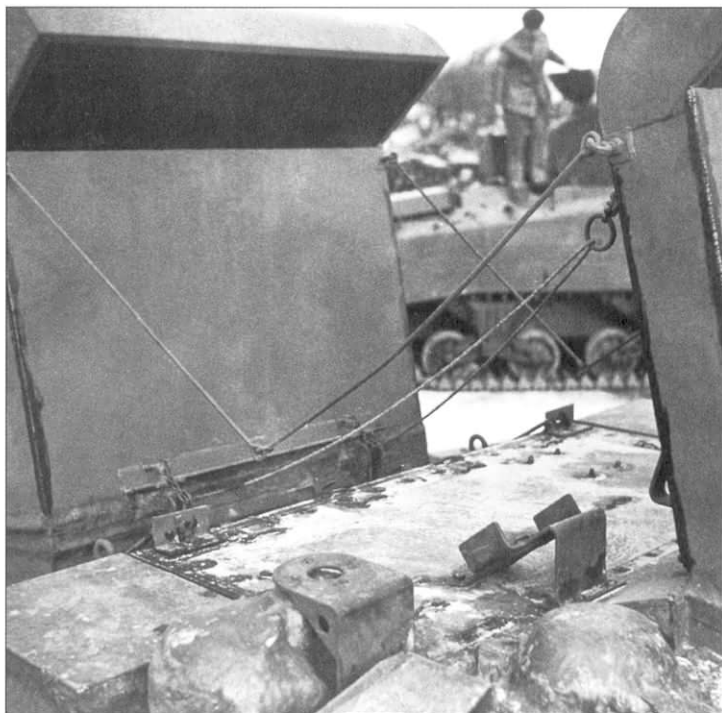
The sea front at Hove in Sussex is the venue for this inspection of the Grenadier Guards by Princess Elizabeth (now HM Queen Elizabeth II). The prominent C Squadron marking on the side of the Sherman is notable, as is the use of the red/white/red Allied recognition sign; soon to be replaced by the ubiquitous white star.



Further west, at Weymouth, General Sir Bernard Montgomery uses another immaculate half-track to inspect 2nd Household Cavalry. It is interesting to see that the leading half-track is equipped with the front mounted winch while the second vehicle has the roller device to assist it over rough ground.



Montgomery again, here examining a Tetrarch light tank of 6th Airborne Reconnaissance Regiment displayed inside a General Aircraft Hamilcar glider. The cable device in front of the tank appears to be part of the automatic, nose-door opening device, activated by the tank upon landing. The other line, leading to the muzzle cover of the gun, probably initiates a detonator to clear the gun for action.



A detailed look at the deep wading gear fitted to a Sherman. The foremost duct, on the right, feeds air to the engine while the larger rear one dispels exhaust gases. These structures are held in place by cables and bolts but are released by explosive charges once the tank is clear of the water.



A line of M4A1 and M4 Hybrid Shermans prepare to test their deep wading equipment. Waterproof canvas covers each gun mantlet and hull machine gun position while Roman numerals show water depth indications up to 7 feet on the side of each tank.



Crowds gather to watch as Sherman tanks thunder towards the coast for embarkation. Many accounts from this time explain that regimental fitters were kept busy welding extra stowage boxes to the tanks. In this case each Sherman has one box across the front of the hull and another, inconveniently larger, attached to the side of the turret. The photograph was taken on the Portchester Road (A27) heading towards Southampton.

A Crusader Anti-Aircraft Tank Mark I, equipped with a 40mm Bofors gun, bowls southbound along the A3 near Waterlooville in Hampshire. The road is lined with Universal Carriers. Travelling arrangements for the Crusader's crew appear to be a bit spartan. The markings indicate an anti-aircraft unit of 1st British Corps.



A Sherman Beach Armored Recovery Vehicle (BARV), with the REME (Royal Electrical and Mechanical Engineers) colors and the Combined Operations symbol boldly emblazoned on their superstructure, rolls past a line of waiting Shermans just before D-Day.

Crews of the Royal Marines Armoured Support Group prepare their Centaur close-support tanks for the invasion. The graduated numbers around the turret were designed to assist with gun laying when the tanks fired from their landing craft in the final stages of the run into the Normandy beaches.



Churchill tanks of 9th Royal Tank Regiment are given the final waterproofing treatment in a residential part of Southampton shortly before moving to the docks. The Churchill, with its large side doors, was a difficult tank to seal and large quantities of a waterproof material known as Bostik were required to close up every orifice.

Similar preparations are shown here, being applied to Shermans of 3rd County of London Yeomanry of 4th Armoured Brigade. In addition to waterproofing crews are busily engaged in stowing their tanks with ammunition and rations for war. Notice how, on the leading tank, part of a sand guard has been used to create an improvised stowage rack on the rear of the hull.





Now the tanks are loaded aboard their landing craft and crews await orders for the invasion to begin. Here we see Sherman gun tanks and an ARV Mark I tightly packed on their LCT. Most of the hard preparatory work is done but this period of waiting must have been very tense.

This interesting line-up from 4th Armoured Brigade includes a Sherman Armored Recovery Vehicle (ARV) Mark I fitted with special deep wading gear, a half-track probably belonging to the REME fitters and a Crusader anti-aircraft tank at the head of a column of Shermans. Intense preparations for the invasion are under way everywhere.



Everywhere one looks, groups of landing craft ride at anchor on the eve of invasion. In the foreground Sherman tanks of A Squadron, 3rd County of London Yeomanry (CLY), wait patiently on their LCT. Notice that by this time tank crews are wearing life preservers.



The LCT in the foreground carries a deck cargo of Sherman DD tanks, each with its screen raised and crew making ready to launch. Further away what appear to be more DD tanks are making for the shore in line ahead. Conditions are by no means flat calm and represent about the limit of what these vulnerable amphibians could accept.



Closer to the shore takes on an air of mystery and menace in the early daylight. Shapes are difficult to distinguish but one can make out at least two Sherman flail tanks, an armored bulldozer, possibly one DD tank and something burning on the beach. The location is Red Beach in Queen Sector of Sword Area. The village of Lion-sur-Mer in real life.



Things are little better when viewed from the beach. Here one can see two Sherman Crab flail tanks, one of which is burning, and the elevated Bobbin device on a Churchill AVRE all halted in the shallows and presumably, therefore, out of action.



Royal Engineers with mine detectors check the edges of a taped route off the beach. In the foreground a Centaur Close Support tank of the Royal Marines Armoured Support Group and beyond, a Universal Carrier and deep wading Caterpillar tractor. The location is St Aubin-sur-Mer.



British 3rd Infantry Division landed on Sword Beach. Here we see Universal Carriers, fitted with deep wading screens, of 8th Infantry Brigade and Commandos relaxing in the foreground. The scene typifies most military operations; more waiting around for something to happen than intense action.



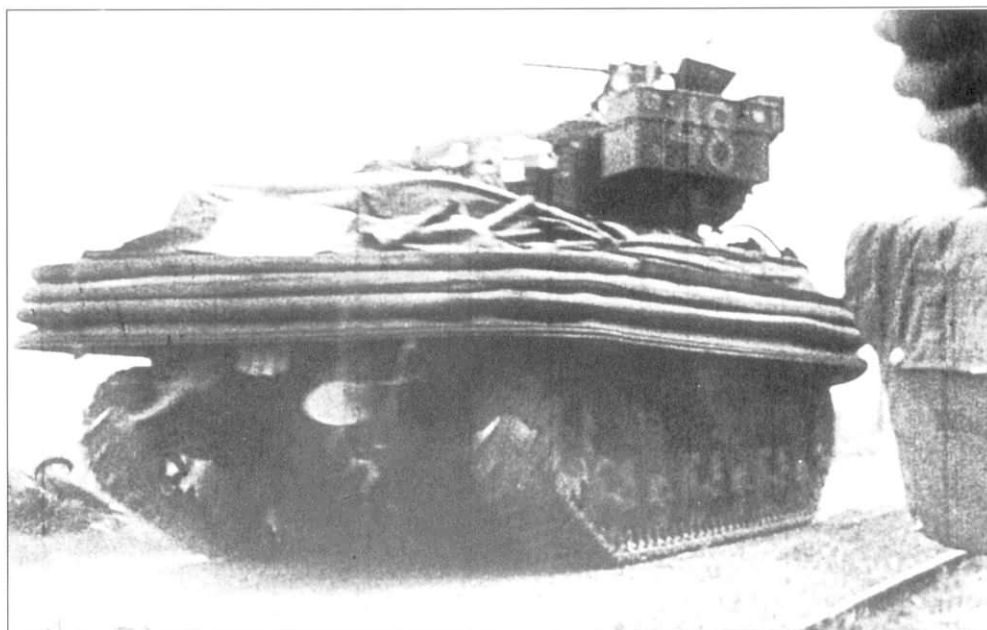
At Langrune-sur-Mer, inland from Sword Beach, tanks of the RMASG encountered concrete anti-tank walls across the streets. Here a Centaur moves in to deal with the obstacle while infantry crouch at the roadside.



The Centaur shown in the photograph at left is knocked out and an M10 tank destroyer of the Canadian Royal Artillery moves up to help, with another Centaur in support. Chipping away at the wall with gunfire was hardly the most effective way of dealing with this situation but, presumably, nothing more suitable was available.



Surrounded by infantry Sherman DD tanks, apparently of B Squadron, 13th/18th Hussars, move cautiously inland from Ouistreham, along the route of a light railway. This tank has its turret trained to the right. Just visible at the back is a large panel with alternating dark and light patterns. No explanation of this has yet been discovered.



Sherman DD tank "48" halts to fire while the infantry take what cover they can. The tank still retains its floatation screen and marine propellers and once again it is possible to see the checkered panel on the back. Notice that this tank also sports a .30 caliber Browning machine gun on the commander's hatch, a feature rarely seen on DD tanks.



Soon tank "48" is ditched but opposition has now been subdued so the infantry move forward confidently. This sequence of pictures appears to have been taken from a movie film. In 13th/18th Hussars A and B Squadron operated DD tanks while C Squadron and Regimental Headquarters landed conventional Shermans and Fireflies direct from landing craft.



Back at the beach an M10 tank destroyer sits on the sand with a half-track on the right and a Churchill tank to its left. The three inch gun M10s served in the anti-tank regiments of the Royal Artillery. The number "46" on this one indicates that it belongs to an infantry division while "E1" indicates the battery. It is in fact 198th Battery of 73rd Anti-Tank Regiment in 50th Infantry Division.



As the beachhead consolidates exits are improved. Here a small box girder bridge, dropped by a Churchill AVRE, remains in place alongside a wire mesh trackway. It is interesting to observe from this, and other pictures, that these bridges appear to have been painted a light color, possibly even white. Notice that the site is protected by a Bofors anti-aircraft gun but the troops look very relaxed.



Once the attacking troops had moved inland the beaches were left a scene of desolation. Here we have the discarded Bobbin attachment from a Churchill AVRE; an abandoned Sherman with its engine deck raised possibly of the East Riding Yeomanry. Beyond that a Landing Craft Mechanized (LCM) washed well ashore and on the left a beached pontoon LST and what appears to be a Rhino Ferry all stranded.



Patches of clay, missed by the Bobbins, trapped many unwary tanks. This is an M3A3 Light Tank (Stuart V) named *Elusive* which belonged to Headquarters Squadron, 5th Royal Tank Regiment in 22nd Armoured Brigade.



Behind the combat troops comes the transport. Here a large group of US Navy personnel watch as a BARV hauls a disabled Fordson 15cwt truck ashore from their LST. Some of the Sherman BARVs photographed around this time appear to have gray upper works. This one also displays the Allied recognition star, a large, rectangular flash in what are assumed to be REME colors and a flag at the front end.

Trapped in the blue clay and overtaken by the incoming tide this Sherman is completely helpless. Waterproofing material still covers the mantlet and the air intake at the rear is visible. Behind the turret the engine deck is stacked with ammunition boxes, suggesting that the tank was not expecting to go into action the moment it landed.



A large, battered sea front building west of St Aubin-sur-Mer overlooks two Churchill Mark IV AVREs of 1st Assault Brigade, 79th Armoured Division. The half-track on the left contains a motorcycle and a Sherman can just be seen on the edge of the photograph.



The 3rd County of London Yeomanry landed on 7 June on Gold Beach opposite the village of Mont Fleury. Here M4A1 Shermans of A Squadron make their way steadily ashore from an LCT. Ahead of them is a beached LCM. Notice the camouflage netting stowed along the starboard side of the landing craft.



Once ashore the tanks of 3rd CLY wind their way along the beach, passing a stationary half-track and an LCT that has broached on the tide line. Overhead, barrage balloons fly to discourage low level air attacks and there is a jumble of shipping as far as the eye can see.



Directly behind the tanks, transport and support units start rolling ashore. These are Ford WOT6, 3 ton four-wheel drive trucks bearing the markings of a Royal Artillery unit of 2nd Army. Everyone looks very relaxed but a tractor is standing by in case any of the trucks get stuck.



On D+1, 7 June, 13th/18th Hussars moved eastwards in support of airborne forces on the Orne River. Here two DD Shermans, still complete with floatation screens and propellers, advance with infantry through St Aubin d'Arquenay. The village appears to have taken a very heavy pounding from Allied guns and bombs.



Here a signaller huddles down in a hedgerow as a Sherman DD tank moves by. The 13th/18th spent most of the second day covering British 6th Airborne Division from a potential counter attack by German tanks. It is interesting to see how long some of the DD tanks retained their amphibious screens. Fears had been expressed that they would be vulnerable to flame-throwers.



There were instances of DD screens catching fire, but not from flame-throwers as far as is known. Here airborne troops stand by with shovels to help the crew of this Sherman as they deal with a burning screen. The number "54" near the rear of the turret would identify this tank as of B Squadron, 13th/18th Hussars.

Inland from the beaches on the Canadian sector the crew of a Medium Machine Gun Universal Carrier wait for orders. The number "64" on the front would indicate the machine gun battalion of an infantry division. It is unusual to see the old red/white/red Allied recognition sign still painted on the side of this vehicle at this time.



The commanding officer's tank of Regimental Headquarters, 13th/18th Hussars, still with the rump of its deep wading gear in place. The tank is covering action taking place on the far side of the field, in which lie a number of Horsa gliders. The CO, Lt Col R T G Harrap was killed on 16 June while travelling in a Jeep.



British soldiers and French civilians mingle in the town of Douvres while the crew of a Universal Carrier service the final drive of their vehicle. The Carrier still retains its deep wading screens. The divisional sign has been obliterated by the censor but the number "61", on the left, suggests the second regiment of the second brigade of an infantry division.

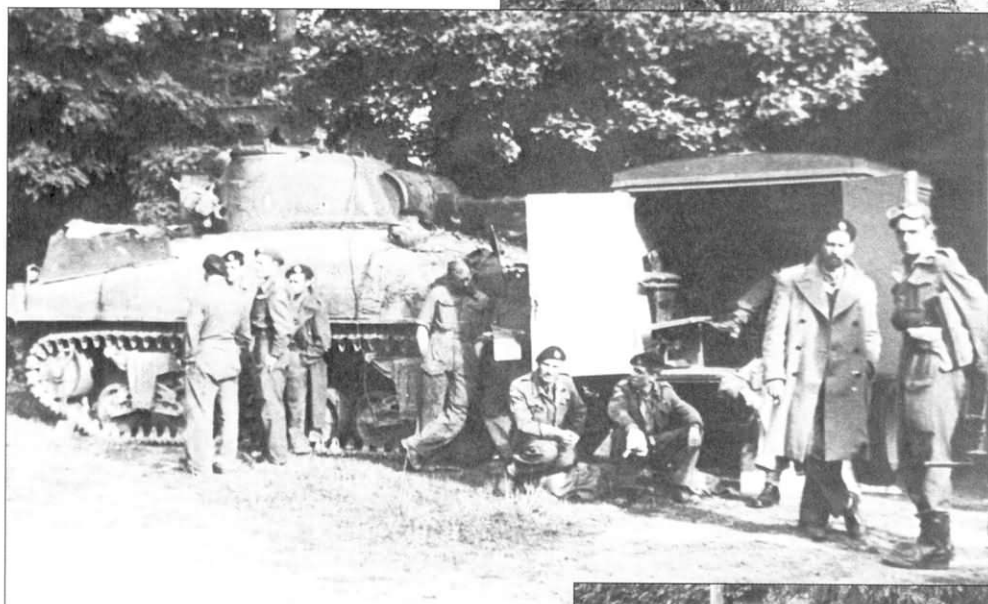


A bearded Royal Navy officer of Combined Operations steadies the ladder while His Majesty, King George VI climbs down from a DUKW of the Royal Army Service Corps. The King arrived on Juno Beach on 16 June. Two US Navy personnel stand by to provide an escort. One wonders if the flag, flying from the DUKW's boathook, is the Royal Standard?



A Sherman named *Fox* of the Royal Marine Armoured Support Group leads two of the unit's Centaurs down a narrow lane. Shermans served as command tanks to this unit and they also carried the special turret markings. Although originally limited to operations within the immediate beachhead the RMASG remained in action for fifteen days and penetrated up to ten miles inland.

A Sherman II (M4A1) of B Squadron, probably 44th Royal Tank Regiment, passing through Revers in Normandy. The 44th RTR compared these Shermans unfavorably with the diesel version they had in Italy, which is where they picked up the habit of using part of a track guard to create a stowage rack on the rear deck. Revers was liberated by the Canadians. This photograph was taken sometime after 9 June.



The crew of another M4A1 of 44th RTR, this time part of headquarters squadron, chat to other soldiers and relax around an Austin K6 ambulance in the sunshine. At this time 44th RTR was the junior regiment in 4th Armoured Brigade.



A Cromwell IV of 8th Hussars, the divisional reconnaissance regiment of 7th Armoured Division. Lieutenant Newman, the regimental Intelligence Officer, practices his French on the locals of a newly liberated village.

A Sherman II DD of 8th Armoured Brigade, running with only the base of its canvas screen in place, moves down the road towards Tilly-sur-Seulles on 13 June. Notice how the base of the screen serves as a tray to carry supplies, tank crews are always looking for more room to stow things. The use of vegetation for camouflage has probably been adopted for Bocage fighting, there can be no serious threat from the air.



M7 Priest self-propelled 105mm howitzers of 7th Field Regiment, Royal Artillery just inland near Hermanville. The use of local camouflage is sensible for a vehicle which operates from a static position. Notice the additional rack at the front with the usual accumulation of items and a spare length of track. The .50 caliber Browning machine gun is reversed in its 'pulpit' as no serious threat from the air is anticipated.



Sherman Crab flail tanks of 22nd Dragoons, senior regiment of 30th Armoured Brigade in 79th Armoured Division. They were photographed south-east of Bayeux on 13 June. These flail tank commanders have retained the .30 caliber Browning machine gun on the cupola, a practice that was not universal popular with British tank crews.



On the morning of 13 June many tanks of the 4th County of London Yeomanry were knocked out by Tiger tanks of 501st SS Heavy Tank Battalion in the village of Villers Bocage. Here German troops examine one of the British tanks, a Sherman V Firefly. Al-Keefek is a soldiers' corruption of an Arabic phrase meaning 'couldn't be bothered'.

Following the action in Villers-Bocage, 4th County of London Yeomanry was pulled out of the line and ordered to rest, while it rebuilt its strength. Here crew members enjoy a fry-up in front of their tank in a Normandy orchard. Notice that even now, over a week after D-day, the Cromwell still has its LCT loading details stencilled on and the remains of detached waterproofing in evidence around the mantlet.



On an even lighter note two men are obliged to take up silly poses while the British newspaper cartoonist Giles produces one of his famous works. Although still apparently 4th CLY, the man holding the spanner has a Royal Armoured Corps cap badge, suggesting that he is one of the new arrivals. The Cromwell on the far end of the line appears to be armed with a 95mm howitzer.



Soon it is time to go. Men of 4th CLY prepare to break camp and one wonders if they will take the liberated chair with them? Their Cromwell has been fitted with an additional stowage rack at the back, welded up from steel strip and wire mesh. At the end of July the two Sharpshooters regiments amalgamated to become the 3rd/4th County of London Yeomanry.



Damaged tanks were recovered from the battlefield by REME personnel and taken away for repair or cannibalization. In this case a mined Sherman Firefly is seen on a Scammell 30 ton tank transporter. Strictly speaking this was an excessive load for the Scammell, but they seem to have handled it. The real problem with these British transporters was the high center of gravity when loaded, due to the tall, sloping semi-trailer design.



The traditional role of the Churchill tank was infantry support but it worked both ways. In close country such as this the infantry kept close to the tanks in order to watch out for tank-hunting German infantry with portable anti-tank weapons. The initial attempt to outflank Caen to the west, Operation Epsom, involved forcing a bridgehead over the Odon river.

The Scammell was equipped with a powerful winch on the tractor unit, but even so it must have been quite a strain to load a casualty like this Sherman which only has track on one side. In the foreground REME fitters are working on the engine of another Sherman which started out as a DD amphibious tank.



When the initial plan to capture the city of Caen soon after landing failed it became obvious that the Allies were in for a hard slog. Thus it was necessary to send for the Churchills, slow but well armored infantry tanks capable of taking punishment. Even so it was rare to find any tank's crew that believed it was adequately protected and most of them liked to decorate their tanks with extra track. The variety of links on show here is remarkable, as are the variations on how and where they should be fitted. In the foreground is a Churchill V with 95mm howitzer; to the right a Mark VII with its 75mm gun.



Where speed was of the essence infantry sometimes rode on the tanks but this also required mutual understanding. The troops had to be prepared to dismount quickly if an action was imminent. The Epsom battle, which forced its way across the Odon, ended on the northern slopes of the notorious Hill 112, south-west of Caen.

Montgomery now decided to make a direct attack on Caen, mainly from the north and west. Here an M7 Priest, 105mm self-propelled gun passes a Humber scout car near La Bijude. The number "42" on the former indicates the senior field regiment, Royal Artillery, of an infantry division. The Humber carries the markings of 30th Armoured Brigade Headquarters in 79th Armoured Division. It is in fact the mount of Brigadier Nigel Duncan, the brigade commander.



This photograph was taken near the fortified village of Gruchy, northwest of Caen, in Canadian 3rd Division sector on 10 July 1944. It shows a Sherman tank, two Universal Carriers and Canadian transport with infantry. By this date the Allies had captured most of Caen but the Germans were still holding the suburbs south of the Orne river.

41



Otter 1 Light Reconnaissance Car, C Squadron, 7th Canadian Reconnaissance Regiment, 3rd Canadian Division, UK, 1944

A General Motors (Canada) design for a four-wheel drive Light Reconnaissance Car. Much more rugged than its British counterpart but with a higher profile and still only armed with one Bren gun, a four-inch smoke discharger and Boys anti-tank rifle that would be fired through the narrow front visor. It carried a crew of three.

Originally the 17th Duke of York's Royal Canadian Hussars, the 7th Reconnaissance Regiment served with 3rd Canadian Infantry Division in North West Europe. The yellow cross on the front shows that this car is participating in a pre-invasion exercise in Britain, acting as an 'enemy' vehicle.



Cruiser Tank Mark VII, Cromwell IV (A27M), 2nd Northamptonshire Yeomanry, 11th Armoured Division, Aldershot, May 1944

This drawing shows a standard Cromwell IV in British olive drab at the divisional concentration area. At this stage it lacks its deep-wading equipment and, of course the so-called Normandy cowl. The 2nd Northamptonshire Yeomanry was created when the original regiment was duplicated in 1939. It became the divisional reconnaissance regiment of 11th Armoured Division in March 1943. As its title implies it operated under divisional orders and not as part of 29th Armoured Brigade. Even so it was generally regarded as the fourth armored regiment of the division. The main difference being that the divisional reconnaissance regiment was equipped with Cromwell tanks whereas the three regiments in 29th Armoured Brigade had Shermans. The 2nd Northamptonshire Yeomanry went into suspended animation in September 1944 and was replaced by 15th/19th Hussars.

The divisional sign is a charging black bull with red embellishments, on a yellow ground. The figure for the divisional reconnaissance regiment in an armored division was "45" on a green and blue divided square.



Light Tank Mark VII (A17), A Squadron, 6th Airborne Armoured Reconnaissance Regiment, 6th Airborne Division, Tarrant Rushton Airfield, Dorset, UK, 6 June 1944

Designed as a cruiser tank this Vickers-Armstrong product was later reclassified as a light tank and in that form served with various armored regiments in the UK and during the invasion of Madagascar. On the evening of D-Day eight tanks were delivered to the Normandy battlefield by air, in Hamilcar gliders.

The tank is painted in the British version of olive drab (Khaki Green No.15) with a disruptive pattern of matt black. The Airborne Division badge is a figure of Bellerophon on the winged horse Pegasus, in pale blue on a maroon square. The figure "41" in white, on a red square, indicates the division's reconnaissance regiment.



Sherman V (M4A4) DD, B Squadron, 4th/7th Royal Dragoon Guards, 8th Armoured Brigade, King Beach, 6 June 1944

Although trained by 79th Armoured Division, the 4th/7th Dragoon Guards formed part of 8th Armoured Brigade when it landed on D-Day. B and C Squadrons, equipped with Sherman DD tanks, landed either side of the coastal settlement of La Riviere, driving ashore from their landing craft with screens up, rather than swimming, due to the prevailing sea conditions.

Since it would be impossible to see the various signs behind the screen these are shown separately. Notice how the brigade sign, a fox's head, combined with the arm of service square and how this, in turn, has a white bar beneath indicating Army troops. Most independent armored brigades adopt numbering systems different to those used by armored brigades within divisions. In this case "994" signifies the senior regiment; 24th Lancers was "995" and Sherwood Rangers "996".



Churchill IV Armored Vehicle, Royal Engineers, 26th Assault Squadron, 5th Assault Regiment, Royal Engineers, 79th Armoured Division, Mike Beach, 6 June 1944

The 26th Assault Squadron landed in support of 7th Canadian Brigade, 3rd Canadian Division, between Courselles and La Riviere. It sports the Bull's Head device of 79th Armoured Division and "1233" on a cobalt blue square. Notice how the Allied recognition sign, a white star within a circle, is accommodated towards the front of the turret roof. The drawing shows the tank after it has shed its waterproofing and deep wading gear.

Working in conjunction with Sherman Crab flail tanks of 22nd Dragoons the AVREs of 26th Assault Squadron formed four assault teams for the landing operation, coming ashore behind the Sherman DD tanks of 6th Canadian Armoured Regiment (1st Hussars). The AVREs were variously equipped with fascines, small box girder bridges and a Bobbin carpet layer.



Sherman V (M4A4) Crab Flail Tank, A Squadron, 22nd Dragoons, 30th Armoured Brigade, 79th Armoured Division, Normandy, June 1944

The 22nd Dragoons was one of six old cavalry regiments revived for service during WWII. It was the senior regiment in 30th Armoured Brigade and on D-Day its squadrons were landed independently on different beaches in the British and Canadian sectors. Landing near Ouistreham a troop of flails from A Squadron, with two troops from their sister regiment the Westminster Dragoons, were hurried inland to support the Staffordshire Yeomanry in their abortive attempt to take Caen.

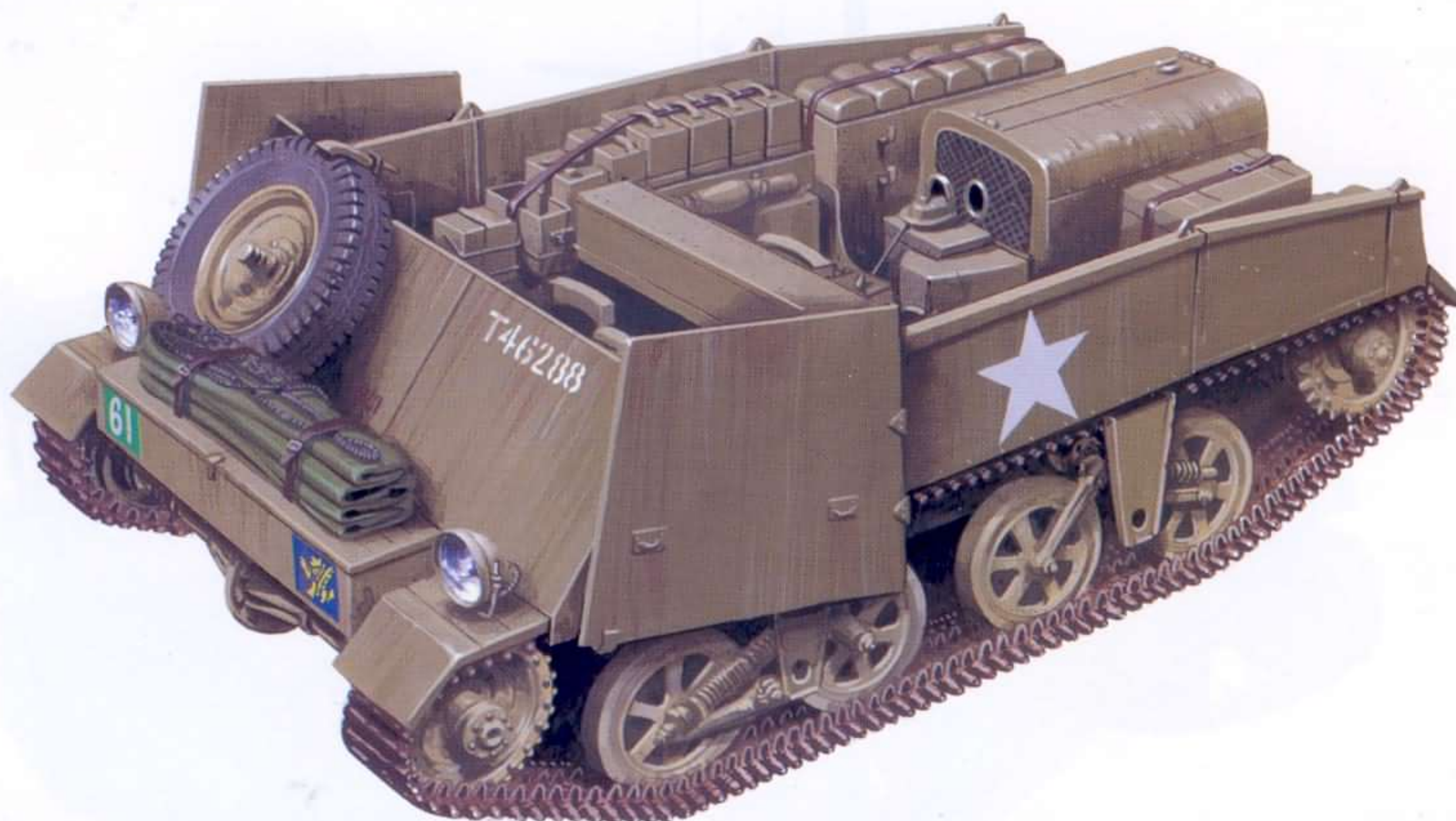
In our drawing the Crab is seen with a compass binnacle on the turret and station keeping signs at the rear. These were devised to enable flails to operate close together when clearing minefields, but they were not always used in practice. It is also worth remarking that stowage arrangements were often modified by tank crews and did not always adhere to the text-book layout shown here.



M10 Tank Destroyer, K Troop, 198th Battery, 73rd Anti-Tank Regiment, 50th (Northumbrian) Infantry Division Normandy, June 1944

The Royal Artillery component of an infantry division in 1944 consisted of three field regiments, one anti-tank regiment and one light anti-aircraft regiment. The anti-tank regiment comprised four batteries; two with towed 17-pounder guns, two with self-propelled weapons. These last being the basic M10, armed with a 3 inch gun, until these were replaced with the modified 17-pounder version. Each SP battery consisted of three troops, each of three sections. Each section was equipped with two M10s.

The system of markings adopted by the Royal Artillery was incredibly complicated. The arm of service marking was a red over blue square showing the appropriate number. Above this a smaller blue square, quartered in red, indicated the battery and gun number within the troop. The divisional sign, two interlocked Ts in red on a black ground, symbolized the rivers Tyne and Tees which bounded the area from which the Northumbrian Division drew its strength.



Loyd Anti-Tank Tractor Mark I, Anti-Tank Platoon, Support Company, 5th Battalion, The Dorsetshire Regiment, 130th Infantry Brigade, 43rd (Wessex) Division, June 1944

The main strength of a British Infantry Division, c1944, was three infantry brigades each comprising three infantry battalions. A typical battalion included a headquarters company, four rifle companies and a support company. This last consisted of one carrier platoon, one mortar platoon, one pioneer platoon and one anti-tank platoon. The anti-tank platoon was divided into three sections and each section was formed from two 6-pounder anti-tank guns with Loyd tractors and two more Loyds equipped to carry ammunition.

The 5th Battalion, the Dorsetshire Regiment, was the second battalion in the second infantry brigade of 43rd Infantry Division, as such it displayed the number "61" in white on a green square. In the anti-tank tractor role the Loyd was modified to carry a spare wheel and a pair of armored extension shields for the gun, but it was notoriously under powered and the shields were often discarded. The Loyd was also provided with a canvas cover on a lightweight tubular frame. This has been omitted here to reveal the interior.



M7 Priest, 105mm Self-Propelled Gun, A Troop, 101st Battery, 33rd Field Regiment, Royal Artillery, 3rd Infantry Division, June 1944

As already explained, a British infantry division in 1944 included three field regiments, Royal Artillery. Those, like 33rd Field Regiment in 3rd Infantry Division, which employed SP guns, could be equipped with the American 105mm M7 Priest or the Canadian 25-pounder SP Sexton. The former were steadily replaced by the latter as they became available in order to standardized on the British gun in towed and SP regiments.

Each battery in the regiment, of which there were three, comprised two troops. Each troop consisting of four guns. As the second field regiment in the division the 33rd carried "42" in white on the arm of service flash. The first battery was indicated by the quartered blue square and the four guns in A Troop were shown as AA, AB, AC and AD.



AEC Mark III Armored Car, Heavy Troop, D Squadron, 2nd Household Cavalry Regiment, VIII Corps, June 1944

Armored car regiments, by virtue of their superior mobility on roads, were the eyes and ears of the formations to which they were attached. It was inevitable that they would be split up to cover as wide a front as possible so the regiments were expanded to four squadrons, each of five reconnaissance troops, one heavy troop and a support troop. The function of the heavy troop was to provide fire support with a weapon capable of firing high explosive rounds. In the case of 2nd Household Cavalry this was supplied by two AEC Mark III cars with 75mm guns, accompanied by one Daimler Scout Car.

The 2nd Household Cavalry consisted of personnel from the Royal Horse Guards and the Life Guards.

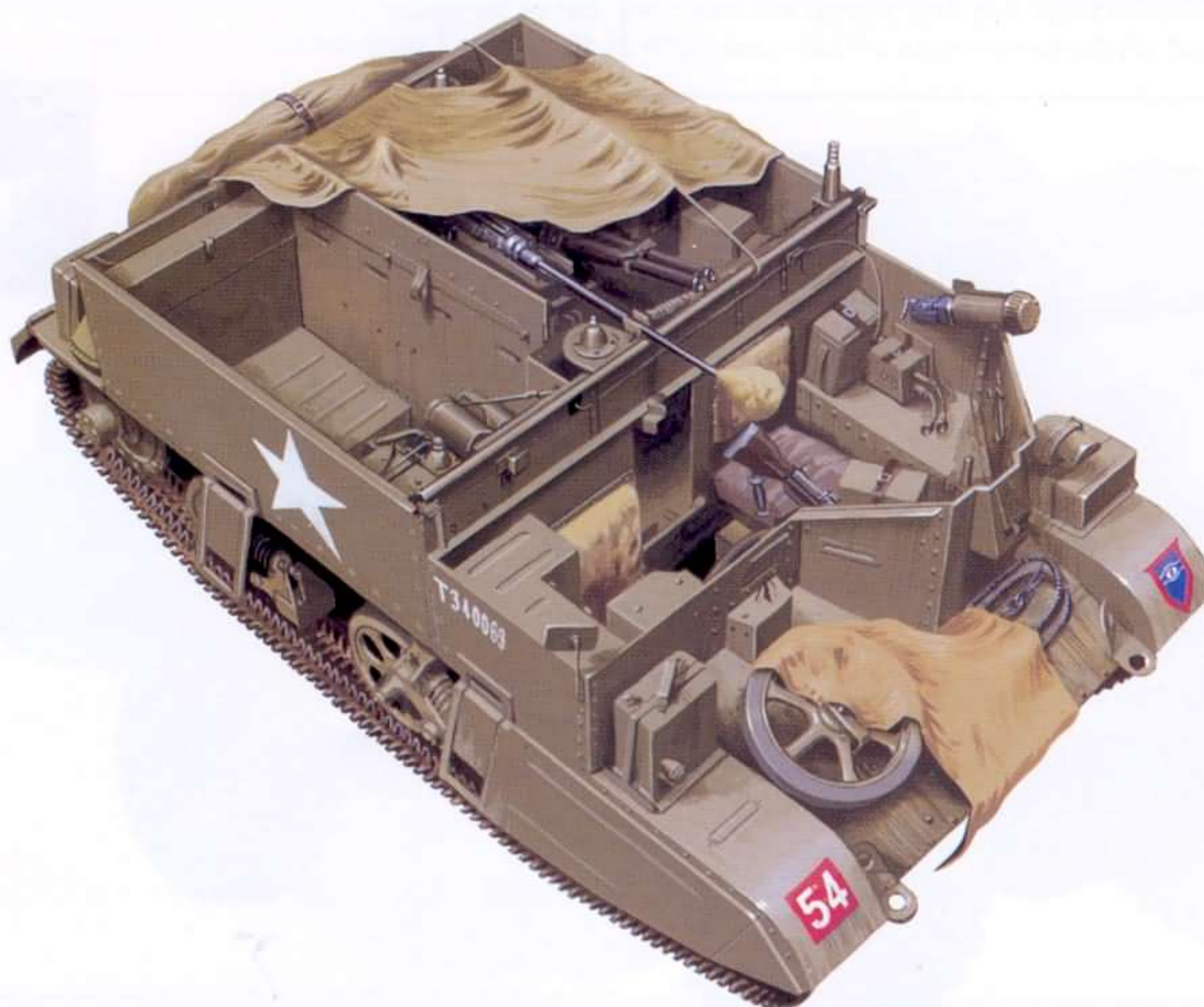
During the Normandy campaign they came under direct control of 8th Corps whose distinctive badge was carried on the vehicles. The creation of a fourth squadron in the regiment led to the adoption of a vertical bar as the tactical symbol.



General Stuart V (M3A3) Light Tank, Reconnaissance Troop, Regimental Headquarters Squadron, 4th County London Yeomanry, 22nd Armoured Brigade, 7th Armoured Division, 13 June 1944

Eleven Stuart tanks were issued to the reconnaissance troop in British and Canadian armored regiments. The M3A3 version is typically associated with the 7th Armoured Division and some regiments operated them without turrets. Note that on this tank's turret British four-inch smoke dischargers have been fitted.

An unusual feature of tanks in 7th Armoured Division was the use of the brigade sign, in conjunction with the arm of service marking as well as the division's famous Jerboa badge. *Calamity Jane II* was one of the tanks knocked out at Villers-Bocage on 13 June 1944 when it was caught by the Tiger tank of SS Panzer Battalion 101. Unfortunately it has not proved possible to read the full War Department number for this tank which is, therefore, partly fictitious.



Universal Carrier Mark III, Scout Platoon, 1st Battalion the Grenadier Guards, 5th Guards Armoured Brigade, Guards Armoured Division, July 1944

The Motor Battalion was an integral part of the armored brigade in an armored division. It was trained and equipped to provide the tanks with immediate infantry support and, although the infantry fought on foot they were provided with a range of light armored vehicles. The battalion was divided into three motor companies and a support company; the Scout, or Carrier Platoon, which consisted of eleven Universal Carriers, provided the reconnaissance element for each company.

In this role the Carriers were arranged to carry a crew of three and each vehicle was supplied with a Bren light machine-gun, Boys anti-tank rifle, three service rifles and a submachine-gun. One Carrier also held a PIAT anti-tank weapon, two others had the two-inch mortar while the rest were equipped with a four-inch smoke discharger.



Sherman VC (M4A4) Firefly, B Squadron, 144th Regiment, Royal Armoured Corps, 33rd Armoured Brigade, Normandy, July 1944

Another example of an independent armored brigade working to its own agenda. The 33rd not only used a numbering system peculiar to itself on the arm of service marking, it also employed numbers in place of geometric tactical signs. The 144th RAC was a converted infantry battalion (originally the 8th Battalion, East Lancashire Regiment) which, up to August 1944 was the senior regiment in its brigade. Changes in organization not only relegated it to second place but also saw a change in the numbering system.

Firefly Shermans, equipped with the 17-pounder anti-tank gun, were issued on the scale of one per troop in armored regiments and they were used with great care since they were all the regiment had to deal with the heavier German tanks. The brackets shown along the side of this tank were intended to support a canvas covered frame, known as Houseboat, which would disguise it as a lorry. These brackets are seen in some photographs of Fireflies in Normandy but so far no evidence has ever been found of tanks fitted with the equipment in service.



Infantry Tank Mark IV (A22) Churchill IV, B Squadron, 107th Regiment, Royal Armoured Corps, 34th Tank Brigade, France, July 1944

The 107th RAC, formerly 5th Battalion, the King's Own Royal Regiment, was the second senior regiment in 34th Tank Brigade. Its tank names were chosen to match the squadron letter; Alert, Brazen etc. The markings carried by the brigade's tanks were conventional in most respects although the brigade selected an altogether more elaborate heraldic device than the simple, colored diabolos used by most other tank brigades. It shows a mailed fist, grasping a spiked ball, on a red shield with a diagonal yellow band, the colors of the Royal Armoured Corps.

Although efforts were being made to replace the 6-pounder gun by a dual purpose 75mm weapon in most Churchill tanks at this time there was a resurgence of interest in the smaller caliber gun when the Armor Piercing Discarding Sabot (APDS) round was issued from June 1944. With a muzzle velocity of 4,000 feet per second this had the theoretical ability to penetrate 103mm of armor at 1,500 yards range, giving the tank the potential to pierce the frontal armor of a Tiger tank at a respectable distance.



Humber Scout Car Mark I, Communications Troop, Headquarters Squadron, 44th Royal Tank Regiment, 4th Armoured Brigade, August 1944

Independent armored brigades, such as 4th Armoured Brigade, were organized along the same lines as those within an armored division; that is three armored regiments and a motor battalion. At times they operated alone but as a general rule were placed under temporary command of a division by the Corps to which they were attached. They could be identified in the field by the brigade sign, in this case a black jerboa, and by the use of green, instead of red, as the arm of service color. Another feature of independent armored brigades was the use of white tactical symbols throughout the brigade.

The Communications, or Intercom Troop, consisting of nine scout cars, was part of the headquarters squadron of each armored regiment in the brigade. In theory it had been agreed that Humber scout cars should be issued to armored regiments while the infantry had Daimlers but this does not appear to have been adhered to rigidly. The car illustrated carries a Bren gun on a remote control PLM mount but some scout cars in this brigade were photographed with heavier weapons, notably the .50 caliber Browning machine-gun.



Humber Armored Car Mark IV, B Squadron, 49th Reconnaissance Regiment, 49th Infantry Division, France, August 1944

The Reconnaissance Corps was created to provide a highly mobile reconnaissance facility for infantry divisions. Just like armored car regiments in armored divisions it was expected to operate on a wide front so each squadron was designed to be totally self sufficient. It was organized on a basis of a headquarters squadron and three reconnaissance squadrons. These in turn comprised three scout troops and one assault troop. Each scout troop consisted of a headquarters section (one armored car, one carrier and two motorcycles) and a reconnaissance section of two armored cars and two light reconnaissance cars and two carrier sections, each with three Universal Carriers.

The Humber Mark IV, with its 37mm gun, was the most powerfully armed vehicle in the squadron but the regiment's function was to gather information rather than initiate combat unless it was unavoidable. Even so it was always a very dangerous business. In most cases the Bren gun and PLM mount on the turret was discarded in action as being more trouble than it was worth, in addition to raising the silhouette of the car to an unacceptable height.



The French city had taken a tremendous pounding and, as the fighting died down, Royal Engineers moved in to clear routes through the rubble. This armored Caterpillar D8 bulldozer is in service with the Canadians. Bearing in mind that it was an American vehicle it is odd that, in this theater at least, only those Caterpillars operated by British and Canadian troops were fitted with protective armor.



Another view inside battered Caen as Royal Signals personnel work to restore communications. One signaler keeps the line aloft with a pole while another operates the mechanical cable-layer from the Universal Carrier.



Montgomery's next plan was to organize a massive strike to the east of Caen which would not only encircle the city but engage the German armor in one massive battle of attrition. Here Sherman Crab tanks of 1st Lothian & Border Yeomanry move south through Escoville supporting 3rd Infantry Division. Three features to note on the nearest tank; the .50 caliber Browning on the commander's cupola, the station keeping arms which look like big rear view mirrors and the lane marking box on the left side.



The Armored Observation Post Carrier apparently belongs to a troop commander of 153rd Field Regiment RA, although the markings suggest an anti-tank regiment. The Observation Post Sherman carries the correct number for the senior field regiment in an armored division. The column is halted near Ranville.

Montgomery's new attack was called Operation Goodwood. Here a Humber Mark IV armored car of the Inns of Court Regiment passes the remains of an armored half-track, mounting a 75mm anti-tank gun, of 21st Panzer Division.



This photograph commemorates the link up between British and Canadian troops on the Orne river south of Caen. The Humber Mark IV armored car belongs to a Canadian reconnaissance regiment. The crew stop to shake hands with British infantry.



The attack against Caen drew most of the German armor eastwards in response. Montgomery therefore elected to strike next in a south-westerly direction in order to throw the enemy off balance. The objective was to be Caumont. Here 6th Guards Tank Brigade Churchill Mark IV tanks, retrospectively fitted with 75mm guns, carry infantry forward along a mine-free route.

The 7th Armoured Division was also involved in the Caumont attack. Here a Cromwell of 5th Royal Tank Regiment, well camouflaged on turret and hull, rolls down a route that has been swept for mines and taped by the Royal Engineers. Infantry keep to the edge of the track and demonstrate that, no matter how they are told to do it, everyone has his own idea about the comfortable way to carry a rifle.



Caumont was deep in bocage country, small fields surrounded by thick hedges and banks. Here Shermans of the Irish Guards pass an ambulance Jeep as they make their way across country. These tanks all display the extra patches of appliqué armor welded onto the hull where ammunition is stowed.



Official photographers serving with the British Army seem to have formed a special attachment to the Irish Guards. Here a heavily camouflaged Sherman overtakes a line of marching infantry as they move towards Caumont. This tank commander has retained the .50 caliber machine gun on his cupola, which was a relatively rare sight in the British Army.

Black Sod must surely be an Irish Guards name. Constant study of these photographs soon reveals all kinds of trends. Notice, for instance, that the Irish Guards invariably paint the names of their tanks on the front face of the driver and hull gunner's hatches. Another common feature is the precise location of the spare road wheel.



It must have been close to noon on this late July day because, as the Irish Guards Sherman passed the photographer was able to cross the track and get another shot at it from the rear. The day looks hot and still. Dust thrown up by the tank lingers in the air to choke the infantry.

At about the same time a column of Carriers is photographed passing men of 2nd Battalion, the Glasgow Highlanders as they slog their way forward. The fourth man in line carries a PIAT or Projector, Infantry Anti-Tank. This weapon, the British equivalent to the Bazooka, was effective enough but difficult to handle on account of its recoil effect.



Once again the photographer appears to have turned round to photograph the column again as it passes through a gap in the hedge and breasts a small rise. A motorcycle dispatch rider has inserted himself into the line and there appears to be some bunching of men and machines as they approach the next hedge line.

The eastern flank of the Caumont attack brought British troops once again into Villers-Bocage. In this picture a battalion of the Lancashire Fusiliers is seen on the outskirts of the town in company with a Wasp, flame-throwing version of the Universal Carrier. The number 56 would indicate the second battalion of the senior brigade in an infantry division.





In Caumont itself a most unusual scene. The vehicle is a Morris-Commercial CS9/B, a self-propelled mount for the 40mm Bofors gun. In this case it is operating against ground targets, its gun pointing through the window of a ruined building, probably into the next street. The crew and a party of infantry take a breather, they seem rather over dressed for July.

A soldier of Movement Control, on point duty, finds himself in an interesting situation. Sherman tanks of Guards Armoured Division roll past him in one direction while Churchills of Guards Tank Brigade approach from the other direction and turn off right at the junction. The location is near the village of Vassy, well south of Caumont.



The Germans' last major stronghold in Normandy was the town of Falaise, against which American, British, Canadian and Polish troops were directed in August. This photograph, taken on the 9th, shows a Universal Medium Machine Gun Carrier on the move.



A long column of Carriers moving through Quesnay, on the main road between Caen and Falaise. Most of the vehicles in this picture carry the markings of 1st Polish Armoured Division. Progress seems to be quite leisurely although there has clearly been fighting in the town.

This photograph, also taken on the Caen – Falaise road, shows a 17-pounder M10 Tank Destroyer, apparently mined, lying abandoned at the side of the road. It appears to belong to a Canadian unit and still retains some of its deep wading trunking. The lorries passing by are Canadian Military Pattern 3 tonners of a Canadian regiment.



It was around this time that field regiments of the Royal Artillery started to exchange their Priest, 105mm self-propelled guns for the Canadian Sexton, mounting the British 25-pounder. This one, shown in company with two Jeeps and various Universal Carriers, belongs to 50th (Northumbrian) Infantry Division.



Many of the redundant Priests were soon converted to carry troops at the instigation of the Canadians for Operation Totalize. The howitzer was removed, along with the ammunition stowage racks, and extra panels of armor fitted at the sides and across the front. Only the .50 caliber Browning was retained in its pulpit. Known as Kangaroos they enabled infantry to keep pace with tanks and enjoy a modest amount of protection. These two were photographed at Vimont, south-east of Caen early in August.



Sextons, meanwhile, were appearing in increasing numbers. This is *Bubbles III* of the second field regiment, Royal Artillery, in 7th Armoured Division. Members of the crew watch anxiously as it passes a light truck, obeying the French rule of the road and kicking up a good cloud of dust as it goes.



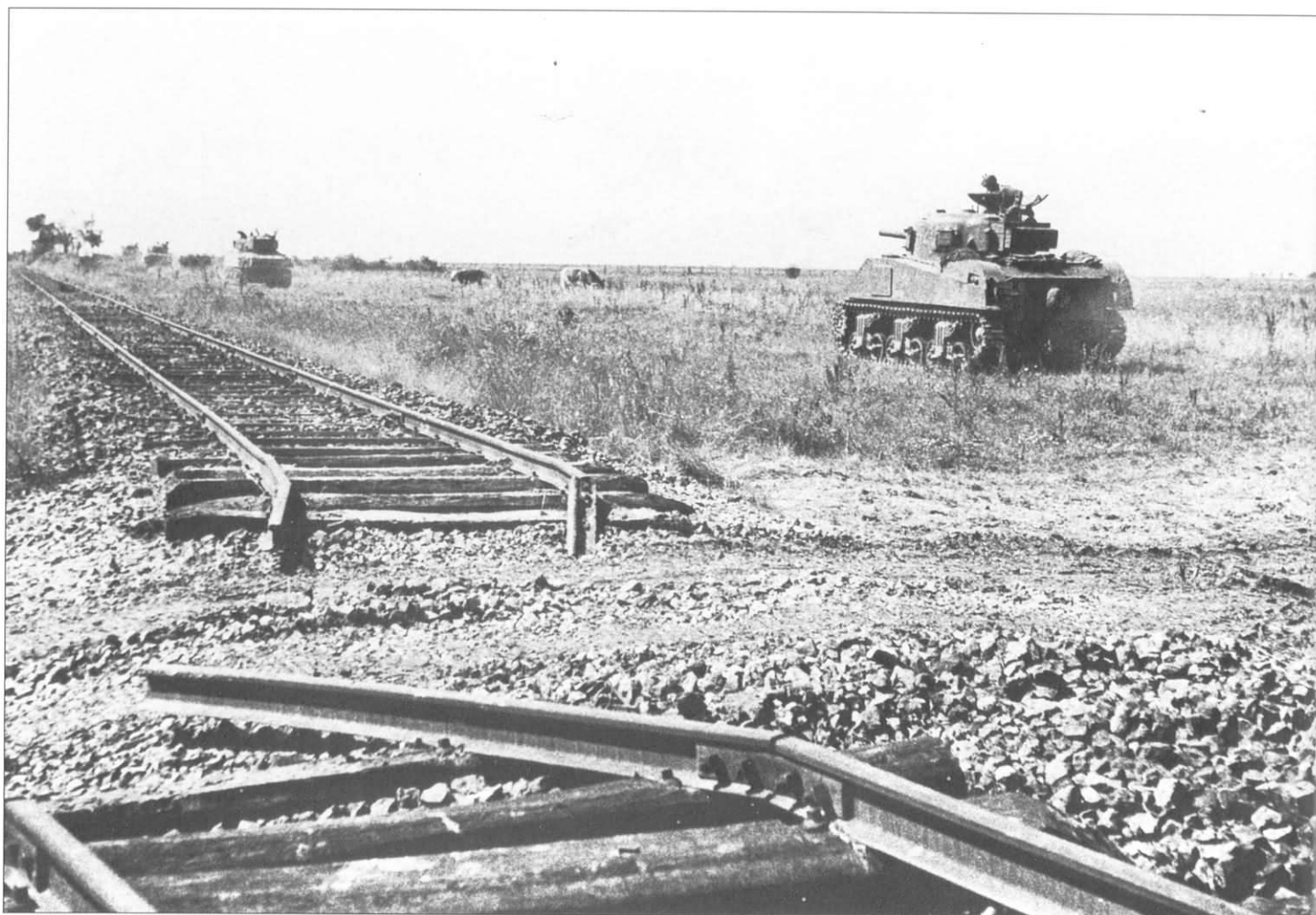
Here Sextons of the second field regiment in 11th Armoured Division deploy in a wheat field. Notice that the crew have fitted racks on the side to carry four spades. Clearly they believed that it was wise to dig in, whenever they halted. The second vehicle has an improvised rack across the front to stow extra stores.



A Firefly, followed by a line of regular Shermans of Guards Armoured Division again. Two interesting features are visible. The frame on the front, which looks like a gun crutch, probably serves some other purpose. The brackets, welded to the final drive covers at the front and the line of brackets visible on the side of the hull, are believed to be supports for a disguise known (in Europe) as Houseboat. This was similar to the device known as Sunshield in the desert which made the tank look like a lorry.



A Sherman of an unidentified regiment with various unusual features. Notice the rope wrapped around the turret and the extra fittings, such as the shackle. But in particular see how the front mudguards have been adapted to cover the rear light clusters. Both features suggest that this regiment often carried infantry passengers. The dancing figure within a circle on the hull side might provide some clue to the regiment's identity.



If the use of front mudguards covering rear lights was peculiar to one regiment then this is the same one. Notice how the railway has been partly torn up in order to create a passage for the tanks. Clearly this line was of no immediate value in the campaign but the rails could easily damage tank tracks if they were driven over.



The need to encircle Falaise and cut off the enemy led some people to take risks. Sherman *Dublin*, presumably of the Irish Guards, has broken through a flimsy wooden bridge. Various officers and their men start to ponder the recovery problem. The first step must be to remove the bridge abutment behind the tank.



Planks from the bridge are used to create a ramp and three recovery vehicles arrive; two Sherman Armored Recovery Vehicles Mark I and a Ward La France wrecker. They seem prepared to pull at an unusual angle, suggesting that the tank's driver will be assisting.



With the two Sherman ARVs doing most of the work *Dublin* is drawn back onto hard ground. There is certainly no sign of a driver in the rescued tank but he may be out of sight. Of the bridge there is little left but matchwood.



A Sexton SP 25-pounder of 324th Battery, 86th Field Regiment RA in 50th (Northumberland) Division followed by a motorcycle dispatch rider, in the village of Ecouche, south of Falaise. The crew have acquired a German helmet as a souvenir. The village has taken a tremendous pounding, testimony to the extent that the Allies used air power in support of their ground troops during the Normandy battles.



Canadians approaching Falaise and a picture which reveals what tank warfare is all about. The tank on the right, no doubt leading the attack, has been knocked out and is still burning. Well aware of the risk another Sherman edges by to continue the advance.



An example of artistic license in wartime journalism. The location is the village of Cintheaux, and the date 11 August 1944. The half-track and trailer belong to the Canadian Army and we are told that they are advancing towards Falaise, but look at the right picture.



According to the original caption this is the same location and date as the previous picture and it also shows Canadian troops advancing on Falaise. Yet this half-track is going the other way. Some joker in the crew appears to be giving a Nazi salute.



Watched by locals from the front of a bombed out shop a Canadian reconnaissance unit pauses in the ruined center of Falaise. A Humber Mark IV armored car leads a Humber Light Reconnaissance Car while a half-track waits in a side street.



First Canadian Army launched Operation Tractable on 14 August. It was intended to sever German escape routes north and east of Falaise. Here Universal Carriers of 3rd Canadian Division, each towing a 6-pounder anti-tank gun, cross open country and raise the dust on a sunny day.

1st Polish Armoured Division played a major part in the final battle for Falaise, operating well to the east of the city in an effort to trap the retreating Germans. This is a particularly fine study of the crew of a Polish Firefly at this time. They seem to have done well for floral tributes and to have acquired a jug which, no doubt, contains something stronger than water.



The destruction of large numbers of the enemy in Falaise and the escape of many more left the way clear for an advance on the river Seine. The entire route was littered with evidence of the German retreat and their continued vulnerability to air attack. This half-track, with its relaxed commander leaning over the windscreen, passes a selection of wrecked German vehicles on either side of the road. Most interesting, in the foreground, is the light armored half-track Sd.Kfz. 250 Neu.



The location of this sequence of photographs has not been established but it may be a road leading down into the Seine valley. Here a Sherman, well protected with additional lengths of spare track, catches the evening sunlight as it rolls along the broad, unsurfaced road.



Another picture from the same location shows three Shermans and a bevy of Universal Carriers. No unit markings are visible but the number "64", on the leading Carrier, suggests the independent machine-gun company of an armored division. Notice how the spare wheel has been painted to display the Allied star.

Two half-tracks of 1st Motor Battalion, Grenadier Guards at the same location but not the same time. The sun is almost directly overhead. It is interesting to note that most photographs of half-tracks taken at this time show the armored shield covering the windscreen in the lowered position, even at times when there would appear to be no immediate threat of action.



Still at the same location the photographer catches Churchill tanks of 6th Guards Tank Brigade, in this case 4th Grenadier Guards. The Guards' Churchills moved up to the Seine by road early in September and at the end of the month traveled by transporters into Holland.

Approaching the Seine a half-track rumbles through a village in the ambulance role. These vehicles, and their crews, earned unstinting praise from the fighting troops for the risks they would take to rescue wounded men from the front line. Notice the White Scout Car, on the other side of the road, possibly part of a communications unit.





Canadian troops of Headquarters Squadron, le Regiment de Maisonneuve, in a Staghound armored car pass the burned wreck of a Tiger II, abandoned at the roadside. It might be interesting to know what the crew of the Tiger felt they needed a long wooden ladder for.



A roadway of crushed bricks leads to a Bailey Bridge thrown across the Seine. The Windsor Carrier, towing an anti-tank gun, belongs to the junior infantry regiment in 11th Armoured Division. Despite the fact that it had been relegated to the infantry the 6-pounder, firing Armor Piercing Discarding Sabot (APDS) ammunition could be very effective even against the heavier German tanks.



Troops of 2nd Canadian Corps at a Seine crossing near Elbeuf. They appear to be using this Staghound armored car to carry railway sleepers across the bridge to improve the roadway. It is an odd role for an armored car. Study of the stowage arrangements shows how the crew are learning to live comfortably in their vehicle. An extra rack has been created at the side with the aid of a wire mesh frame.



Further south, at Louviers on the river Eure, more Canadian troops are rolling on towards the Seine. Two half-tracks pass a White Scout Car, posted on the corner of the street as part of the tactical headquarters. It is interesting to see that the Germans did not think it necessary to remove direction signs, at least not in this part of France.



South again, to Vernon where British troops crossed the Seine. This Sherman Firefly is an M4 Hybrid; a welded rear hull mated to a cast front section. Like other Fireflies the front hull machine-gunner's location was eliminated in order to provide more stowage space for main armament ammunition.



From the Seine to the Somme the scene remained the same. Columns of retreating German vehicles, caught and destroyed by Allied air-power and armor, litter the roads. Here a camouflaged Sherman trundles past a burnt-out half-track. The countryside was changing too; rolling, open country and long, straight, tree-lined roads.



Not all of the casualties were soldiers. The German Army still relied to a vast extent upon horse drawn transport and they suffered too. Note that this Sherman is fitted with a version of Sergeant Culin's bocage busting device, known in the British Army as the Prong.

A dramatic photograph taken from the back of a half-track during the advance. These vehicles, belonging to 4th Armoured Brigade, pull as far across the road as they can get in order to avoid some abandoned German vehicles that are still burning.



From the river Somme onwards it became one incredible race. The flat plains of Picardy were difficult for the Germans to defend and before long three British armored divisions were kicking up the dust as they took part in a mad dash for Belgium. A Sherman Firefly heads this column as it breasts a slight rise.

Endless columns of tanks and other armored vehicles, combined with hot summer weather, turned all roads to fine dust. Here another Firefly, driving with its turret reversed, leads a Cromwell. It was tiring at the time, and there was the constant threat of ambush at locations such as this, but many veterans remember it as an exhilarating experience.





From the back of a column some idea of the scale of the operation might be judged. Sherman tanks, stretching as far ahead as the eye can see, thunder along the road. Leading elements are entering a village, surrounded by a cluster of trees. It was positions such as this that the Germans selected for defensive positions; cover to shoot from but a clear field of fire in virtually every direction.



In this area grass has replaced foliage as the camouflage medium. The ways that British tank regiments chose to identify individual vehicles are so varied that they represent a valid study in themselves. So few appear to have adopted the official system that it is difficult to imagine what half of them mean. In this case "4 C" could indicate 4th troop in C squadron but the symbolism of the divided circle remains a mystery.



Here the 'ever open eye' badge just visible on the nearside rear, linked to the number "52" on the other side indicates a Sherman of 1st Battalion the Coldstream Guards in Guards Armoured Division. The Guards, inevitably, had their own arrangements for indicating squadron and troop.

The rapid advance across France created a logistics nightmare. Until more ports could be opened, east of the Normandy beaches, everything had to come by road from the west. The official censor has been busy on this photograph of a Canadian Military Pattern 3 tonner, leading a column of Fordson 15 cwt and Universal Carriers over the Bailey Bridge at Vernon on the Seine.



Where ever possible tanks and transport used separate routes. Here a Cromwell of HQ, 22nd Armoured Brigade in 7th Armoured Division follows a track through the fields, watched by a French farmer getting his harvest in, while wheeled transport uses the road.



Meanwhile, up at the sharp end, a Humber Mark IV armored car belonging to the Reconnaissance Regiment of 50th (Tyne-Tees) Infantry Division, is passed by a Cromwell in a French village. The Cromwell may well be a command tank if the object on top of the turret is a map board.



A well camouflaged Cromwell Observation Post tank. The letters RB, front right, indicate the troop commander of B Troop in P battery of a field artillery regiment. Probably 5th Royal Horse Artillery in 7th Armoured Division.

It was not all plain sailing by any means. Here the advancing tanks are directed off the road as a party of Sappers check for mines. The man on the right is equipped with a mine detector while two others, watched by a third, probe for the offending article.



Here the crew of a Humber scout car of 44th Royal Tank Regiment in 4th Armoured Brigade halt for a quick smoke alongside an M4A1 Sherman of their regiment on the outskirts of a village. Humber Scout Cars, which carried a three-man crew, were more popular in armored divisions than the two-man Daimler.



Another view of a Humber Scout Car of 44th RTR which in this case has been armed with a .50 caliber Browning heavy machine-gun. BTA probably stands for Battalion Technical Adjutant; "124" is the unit serial number for the regiment.



An interesting collection of vehicles operated by 15th (Scottish) Reconnaissance Regiment photographed near Lille. Two Humber Mark IV armored cars, followed by two Universal Carriers, two half-tracks, two more Carriers and unit transport.



East of Lille a seated row of German prisoners-of-war watch as an M5 (Stuart VI) light tank passes a Cromwell tank with two Daimler armored cars in the background. The spool of wire on the offside track guard of the Cromwell is believed to be part of an improvised device by means of which the tank could drag anti-tank mines off the road.



While the British raced for Belgium the Canadians were given the task of clearing the Channel ports in an effort to shorten supply lines, here a Humber Mark IV armored car, of a Canadian reconnaissance regiment, passes a well laden Universal Carrier.



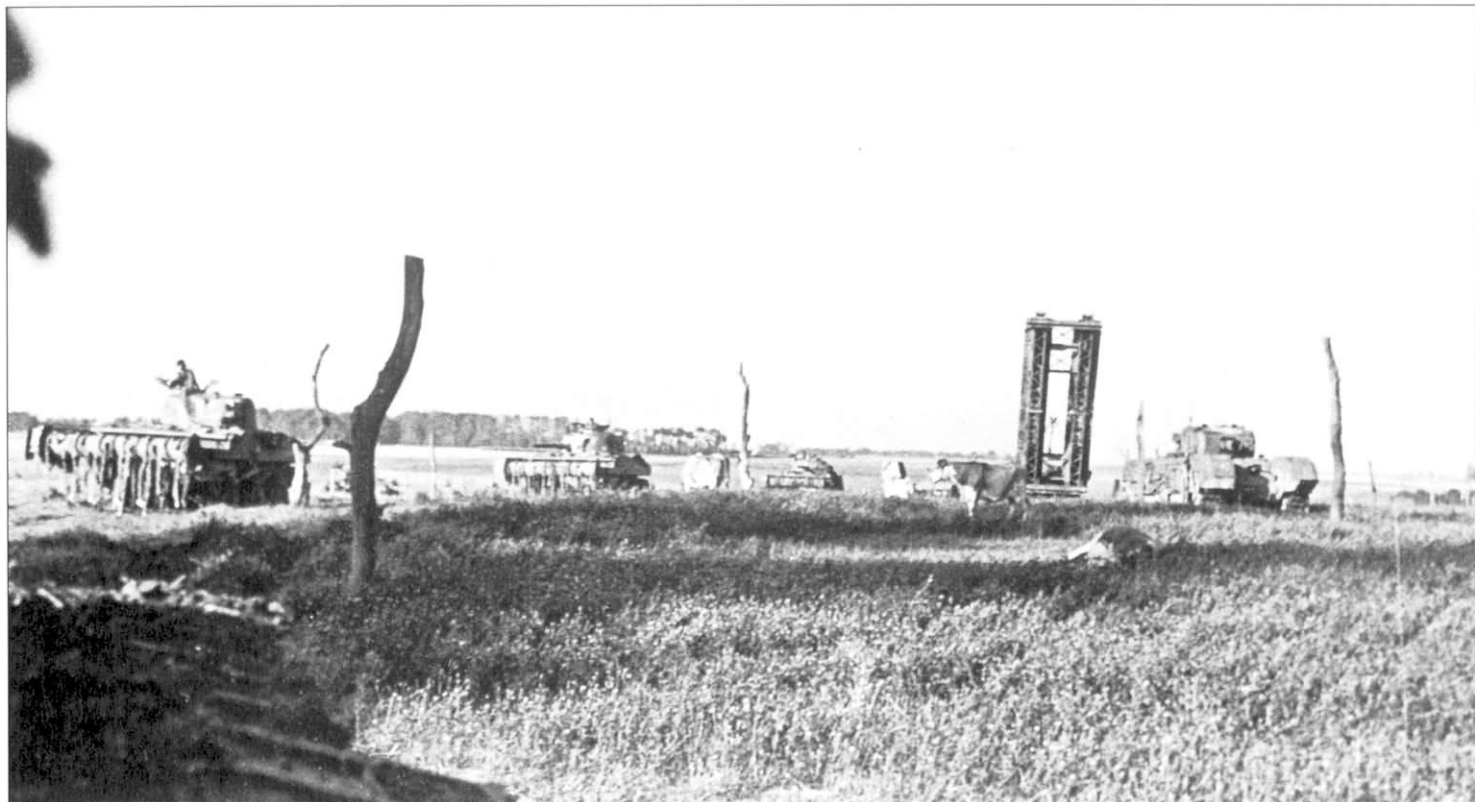
Another Churchill of 107th RAC. The word *Bacchus* on two cans at the back could be a B Squadron name. If not it might suggest a crew with a particular predilection for the local wine. The regiment can be identified by the number "157" on the back, the white bar beneath it shows that at this time the brigade is under Army control.



British Churchills of 34th Tank Brigade were attached to 1st Canadian Corps for the attack on Le Havre. Here a Churchill VII of B Squadron, 107th RAC moves along a dusty road. Notice that the center section of the track guard has been removed. This was to prevent it buckling and jamming the turret.



Le Havre, being a well defended port, required the full panoply of specialized armor to crack its defensive front on the landward side. Here a troop of Churchill AVREs of 79th Armoured Division moves forward in bright sunlight.



The assault on Le Havre, codenamed Operation Astonia, commenced on 10 September. A series of lanes would be driven through the minefields, pillbox lines and anti-tank ditches by specialized armor backed up by infantry tanks. Here a column of Sherman flail tanks of B Squadron, 22nd Dragoons takes one route while a Churchill AVRE, followed by another carrying a Small Box Girder Bridge belonging to 222nd Assault Squadron, Royal Engineers, follow a parallel course.



These are Churchill tanks of 7th Royal Tank Regiment, their tracks clearly visible in the grass. The poles were probably erected to discourage gliders from landing but they present no obstacle to tanks. Despite the work of the flails 7th RTR lost quite a number of tanks on mines during the attack but the majority were later recovered and repaired.



The smoke of battle is beginning to spread along the skyline. The Universal Carriers belong to 2nd Battalion, the South Wales Borderers in 56th Infantry Brigade, supported by Churchills of 7th RTR. Well ahead of them one can just make out the flame from Crocodiles of A Squadron, 141st RAC attacking a strongpoint in gap 'Hazel'.



Here more Crocodiles of 141st RAC pass through gap 'Laura' while infantry move aside to let them go by. Lethal as they were, Crocodiles had to be handled with great care. Once the flame-throwers had been pressured up for action they had to be used promptly. If they did not fire, leakages would occur and gas pressure dropped rapidly.



Boulogne was the next Channel port to fall. Here a Canadian M10 tank destroyer is seen, rolling through the dock area. Two spare sprocket rings are visible stowed on the side, while two road wheels and a long strip of track are located at the front.



After Boulogne it was the turn of Calais and Cap Gris Nez where long range guns were used to shell Dover across the Channel. Crocodiles of 141st RAC were used, each squadron supporting a different infantry brigade. The flame-throwers had dramatic effect on the defenders but they did not have it all their own way. This trailer has been seriously damaged, probably on a mine.



This is the Churchill AVRE of Captain March, 284th Squadron, Royal Engineers, after it fell off the side of a concrete blockhouse at Noires Mottes. The tank had been leading the way down a treacherous track when the accident occurred. The state of the ground is due in no small part to the Royal Air Force, which dropped nearly 7,000 tons of bombs on the area.



Meanwhile the dash across France towards Belgium resolved itself into something of an unofficial race. The 11th Armoured Division was directed to Antwerp while the Guards Armoured Division was given the prestigious task of liberating Brussels. Here Shermans of the Grenadier Guards approach Arras, passing Stuart tanks of the reconnaissance troop and Humber scout cars.



A photographer set himself up at a Belgian frontier post with a small group of locals when the Guards came through. Here they adopt rather stiff poses for the benefit of a Sherman crew, probably A Squadron of the Irish Guards.



Further north a Sherman of 23rd Hussars, 11th Armoured Division, heavily camouflaged, pauses outside the post office in a French town. This is another example of a British Sherman with a pair of smoke grenade dischargers mounted on the side of the turret.

A Universal Carrier of 3rd Battalion, Irish Guards, in 32nd Guards Brigade, is halted while the crew pose and the welcoming committee has another go at waving, as much to the camera as the vehicle. The amount of kit stowed on the front of the Carrier masks the Ben gun slot and the driver's protected visor, but it is still topped by an Allied star, just in case.



Brussels; the Daimler armored car of Lt-Col H Abel-Smith commanding 2nd Household Cavalry Regiment passes through a very restrained crowd. The Daimler has a Littlejohn adapter fitted to its 2-pounder gun. Following is a Staghound mounting a .30 caliber Browning on top of the turret.



The Welsh Guards attract enormous crowds as they near the center of the city. Hats are waved and people reach out to clasp the hands of the driver of this Cromwell. A fine mesh net has been wrapped around the turret upon which camouflage material is attached.



Soon the Cromwells are literally swamped with revelers. From this angle it is possible to count up to forty people on the nearest tank and it is safe to assume that there must be at least ten more on the other side.

Somewhere underneath this mass of joyful humanity is a Sherman tank. The history of Guards Armoured Division describes the amazing display of emotion with which they were greeted. The population alternated between attempts to embrace their liberators and burn effigies of Hitler!



M5 Stuart tanks and Shermans of 2nd Battalion, Irish Guards, having swept around east of the city, halt in a damaged square. Most regimental histories explain that their tanks were chalked all over with messages from grateful citizens. Notice the German radio truck, abandoned on the other side of the square.

